

# Global Tropics Hazards And Benefits Outlook

12/8/2020

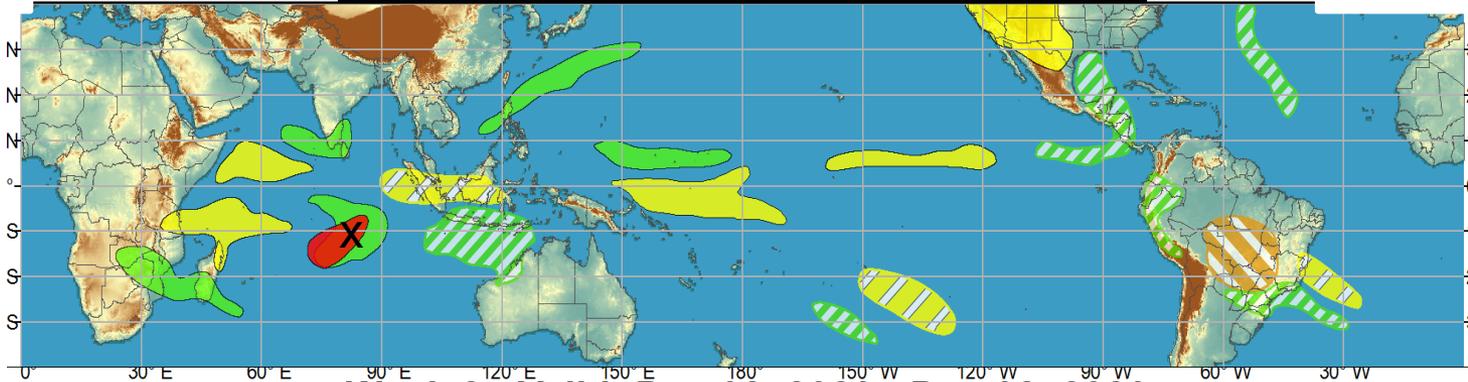
Brad Pugh

## Outline

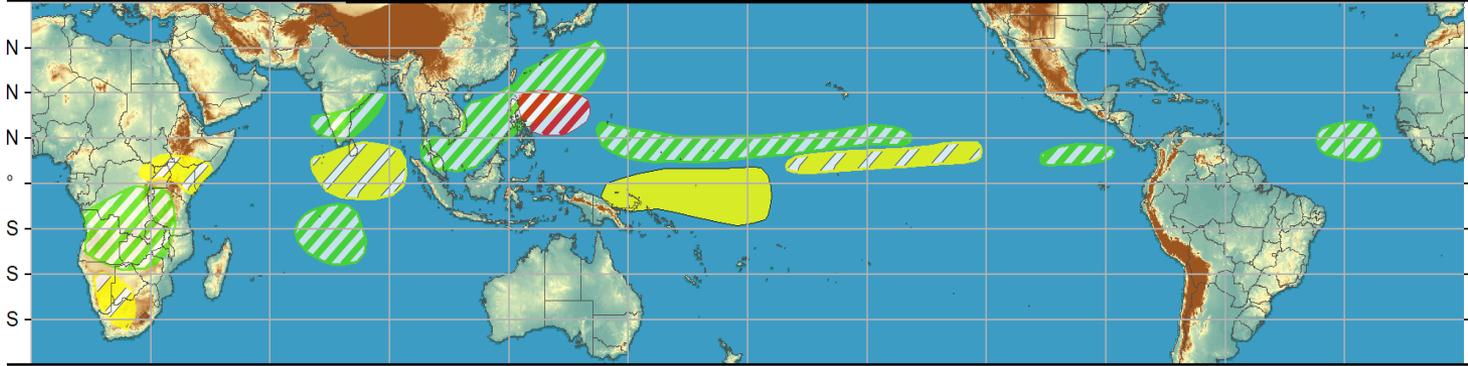
1. Review of Recent Conditions
2. Synopsis of Climate Modes
3. GTH Outlook and Forecast Discussion
4. Connections to U.S. Impacts

# Outlook Review

**Week 1 - Valid: Dec 02, 2020 - Dec 08, 2020**

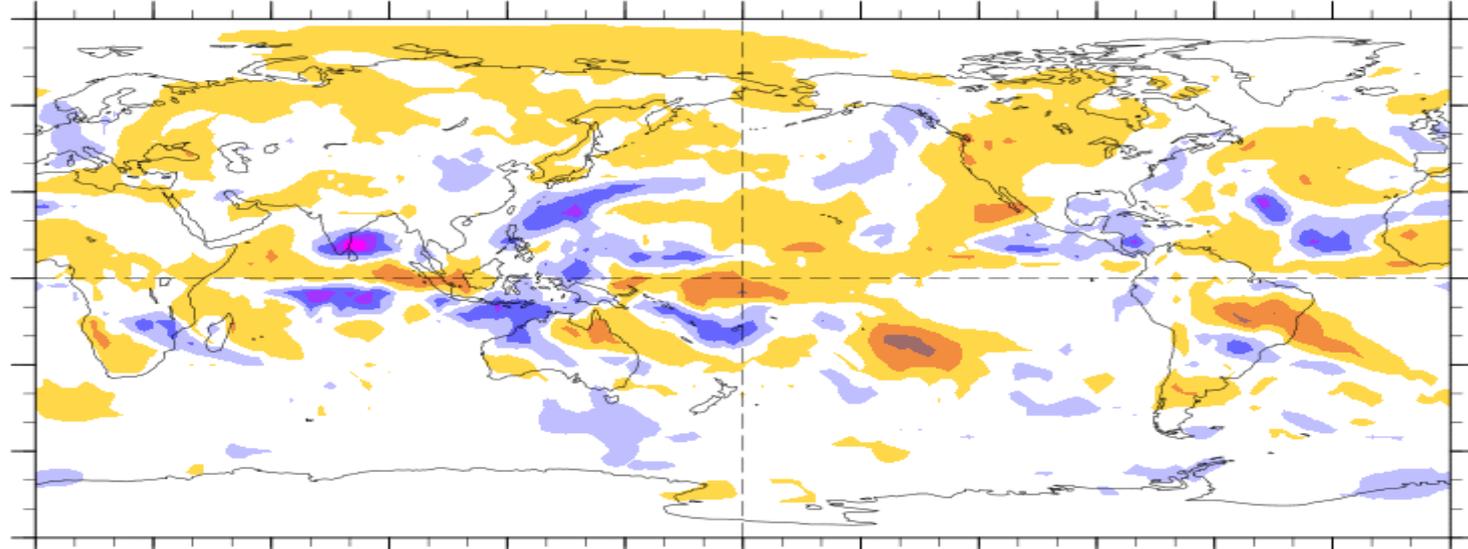


**Week 2 - Valid: Dec 02, 2020 - Dec 08, 2020**



7-Day Average OLR Anomaly

2020/11/30 - 2020/12/06



Cool shading  
More clouds/rain

Warm shading  
Less clouds/rain

# Synopsis of Climate Modes

**ENSO: November 12, 2020 Update**

***Next update December 10***

ENSO Alert System Status: [La Niña Advisory](#)

- La Niña is likely to continue through the Northern Hemisphere winter 2020-21 (~95% chance during January-March) and into spring 2021 (~65% chance during March-May)

## **MJO and other subseasonal tropical variability:**

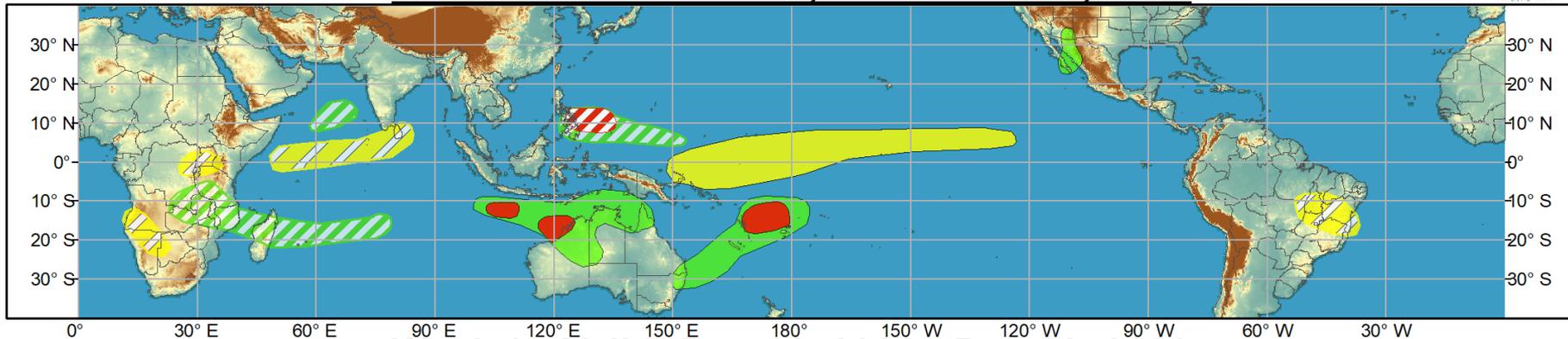
- The MJO is currently over the West Pacific and is destructively interfering with the ongoing La Niña.
- Model guidance continues to feature diverging outcomes on the strength of the MJO, likely due to the destructive interference.
- The MJO contributed to tropical cyclone (TC) development over the Indian Ocean basin since late November.



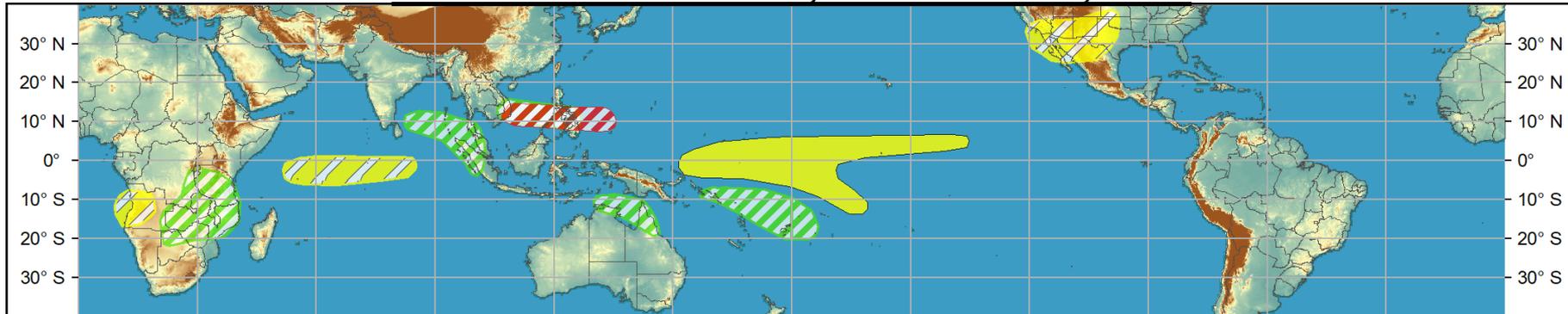
# Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



## Week 1 - Valid: Dec 09, 2020 - Dec 15, 2020



## Week 2 - Valid: Dec 16, 2020 - Dec 22, 2020



**Confidence**  
High Moderate

**Tropical Cyclone Formation**



Development of a tropical cyclone (tropical depression - TD, or greater strength).

**Above-average rainfall**



Weekly total rainfall in the upper third of the historical range.

**Below-average rainfall**



Weekly total rainfall in the lower third of the historical range.

**Above-normal temperatures**



7-day mean temperatures in the upper third of the historical range.

**Below-normal temperatures**

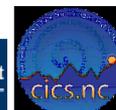


7-day mean temperatures in the lower third of the historical range.

**Product is updated once per week, except from 6/1 - 11/30 for the region from 120E to 0, 0 to 40N. The product targets broad scale conditions integrated over a 7-day period for US interests only. Consult your local responsible forecast agency.**

Produced: 12/08/2020

Forecaster: Pugh



# IR Satellite & 200-hpa Velocity Potential Anomalies

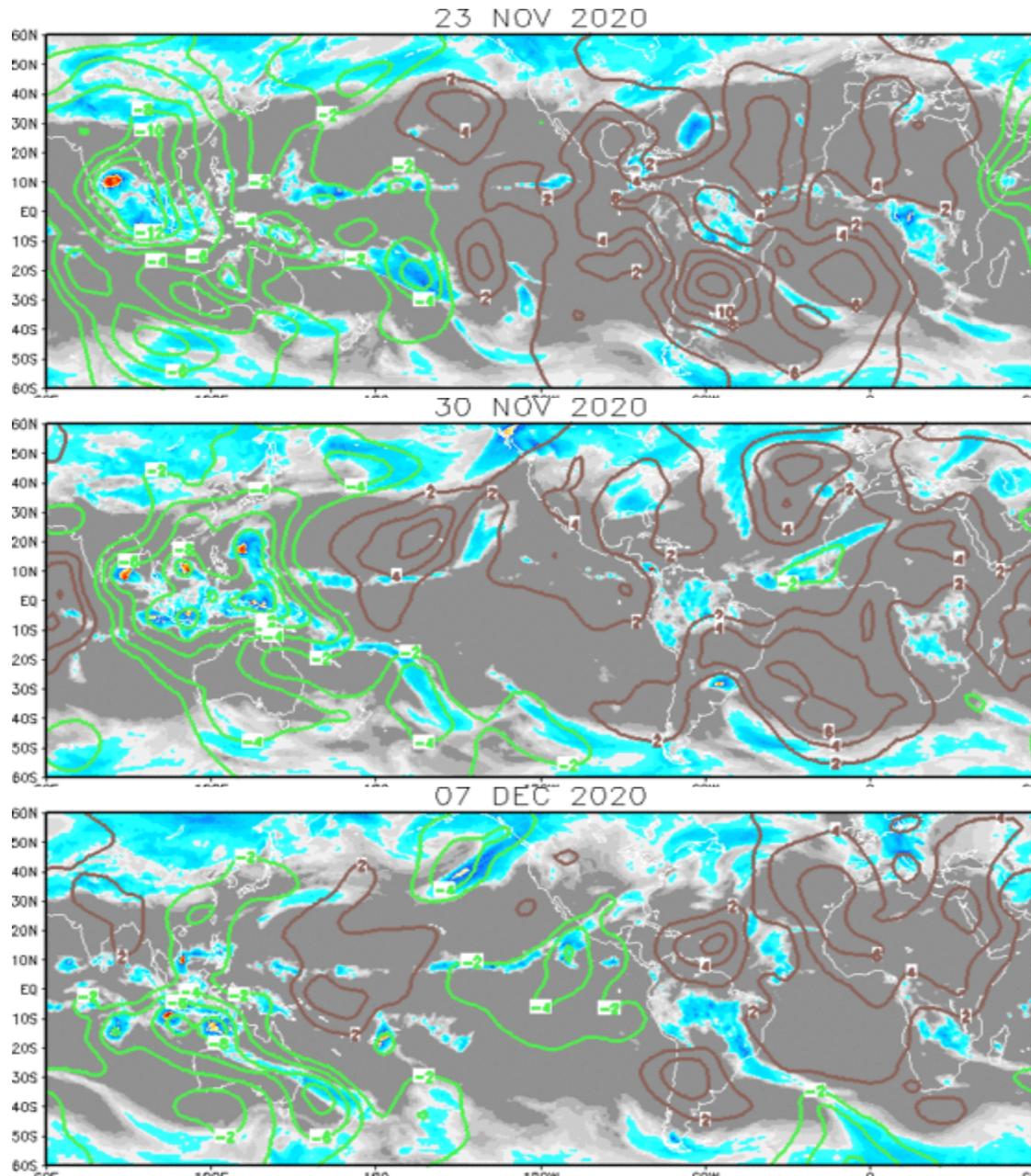
Green: Enhanced Divergence

Brown: Enhanced Convergence

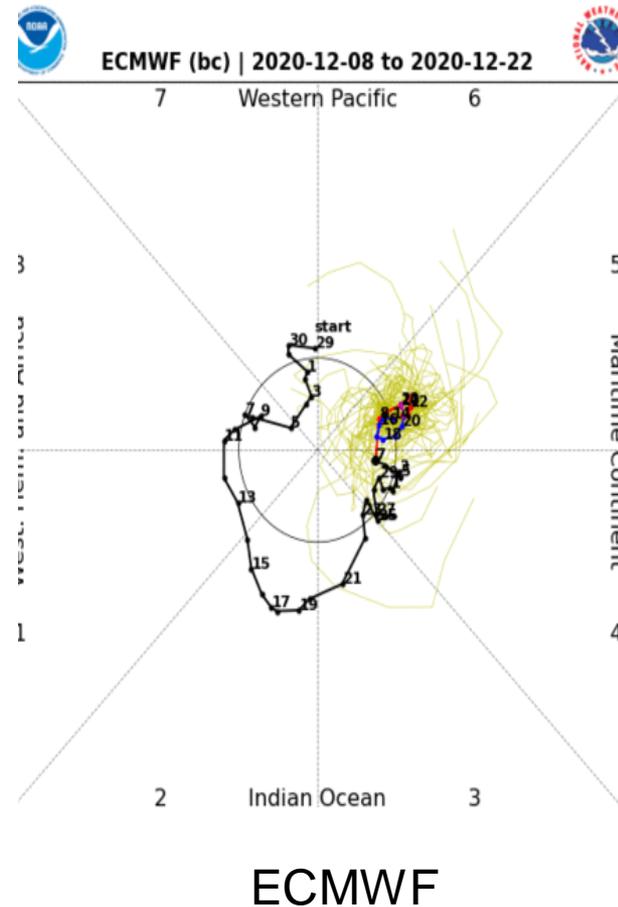
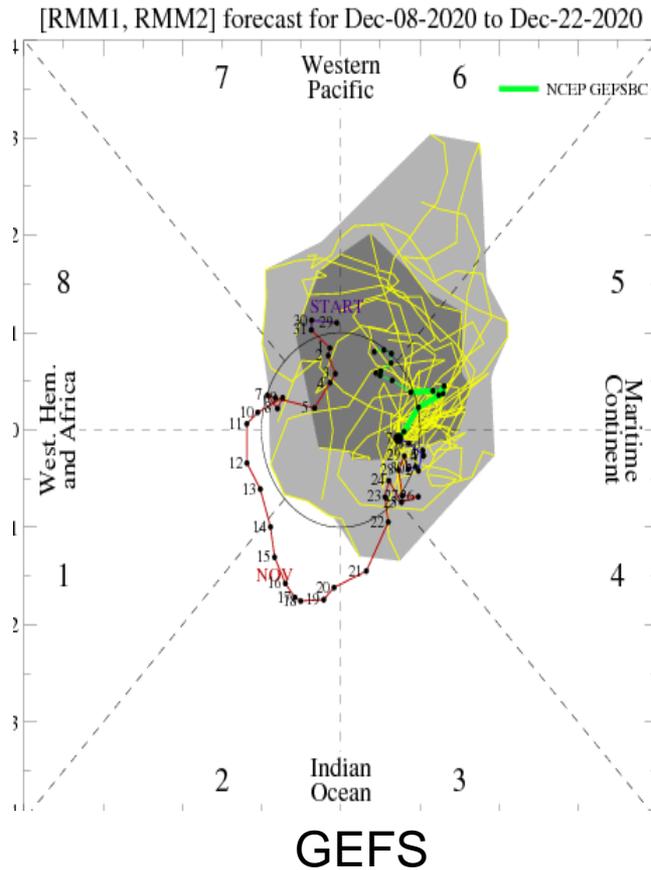
Increasingly defined wave-1 pattern, with Hurricane Iota no longer mixed in with the suppressed convection over the Western Hemisphere. Pattern slides east some from mid-Nov.

Less coherence once again, with a Kelvin wave near the African coastline breaking up suppression of convection from the Americas through Africa.

Despite the enhanced phase of the MJO overspreading the Pacific Ocean, anomalous upper-level convergence persists at the Date Line.

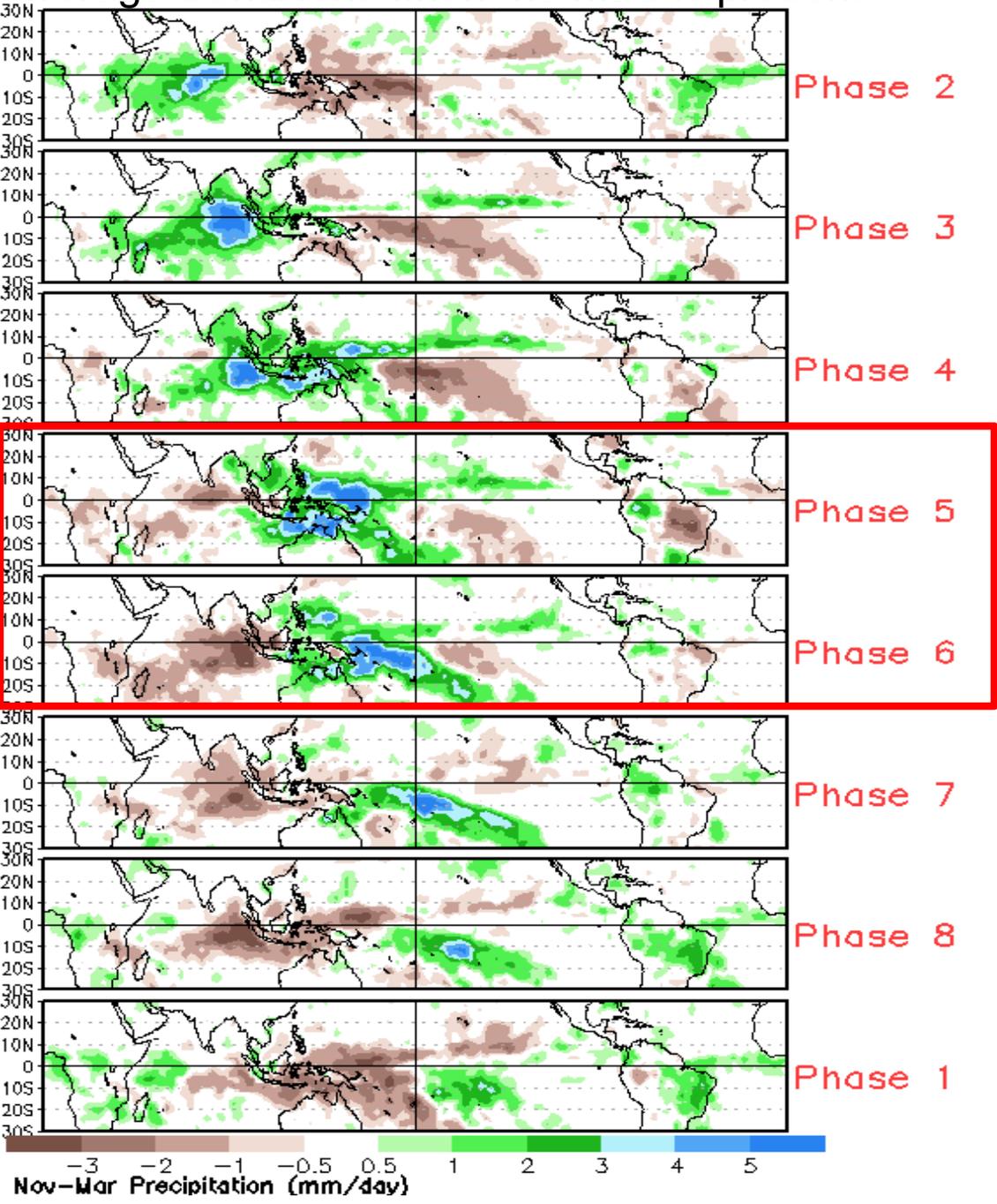


# MJO Observation/Forecast



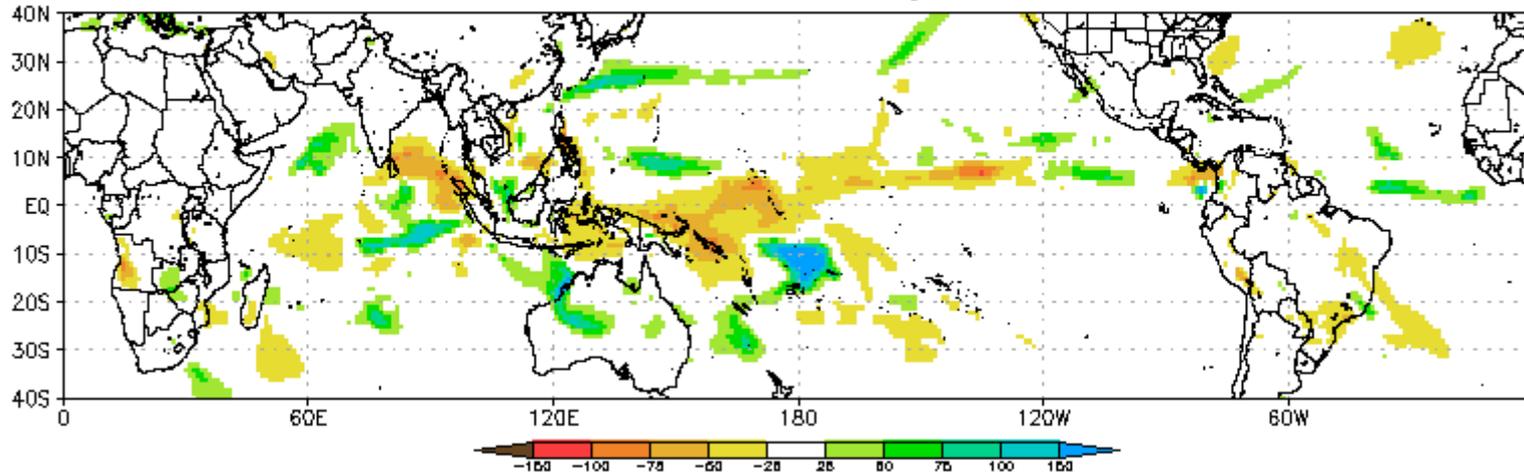
The ECMWF model seems to be latching onto the ongoing La Nina more, while many of the GFS ensemble members depict a strengthening MJO.

# Average Conditions when the MJO is present

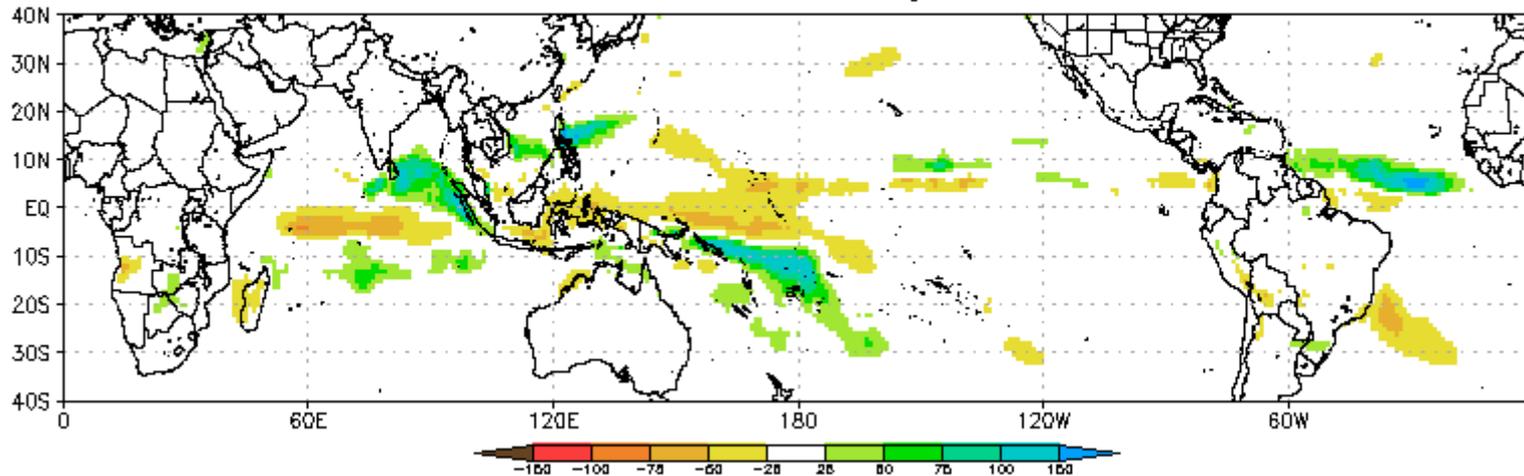


CAVEAT: These panels are representative of robust MJO events.

CFS Precipitation Anomalies (mm) Issued 07Dec2020  
Week-1 Forecast Ending 15Dec2020



CFS Precipitation Anomalies (mm) Issued 07Dec2020  
Week-2 Forecast Ending 22Dec2020



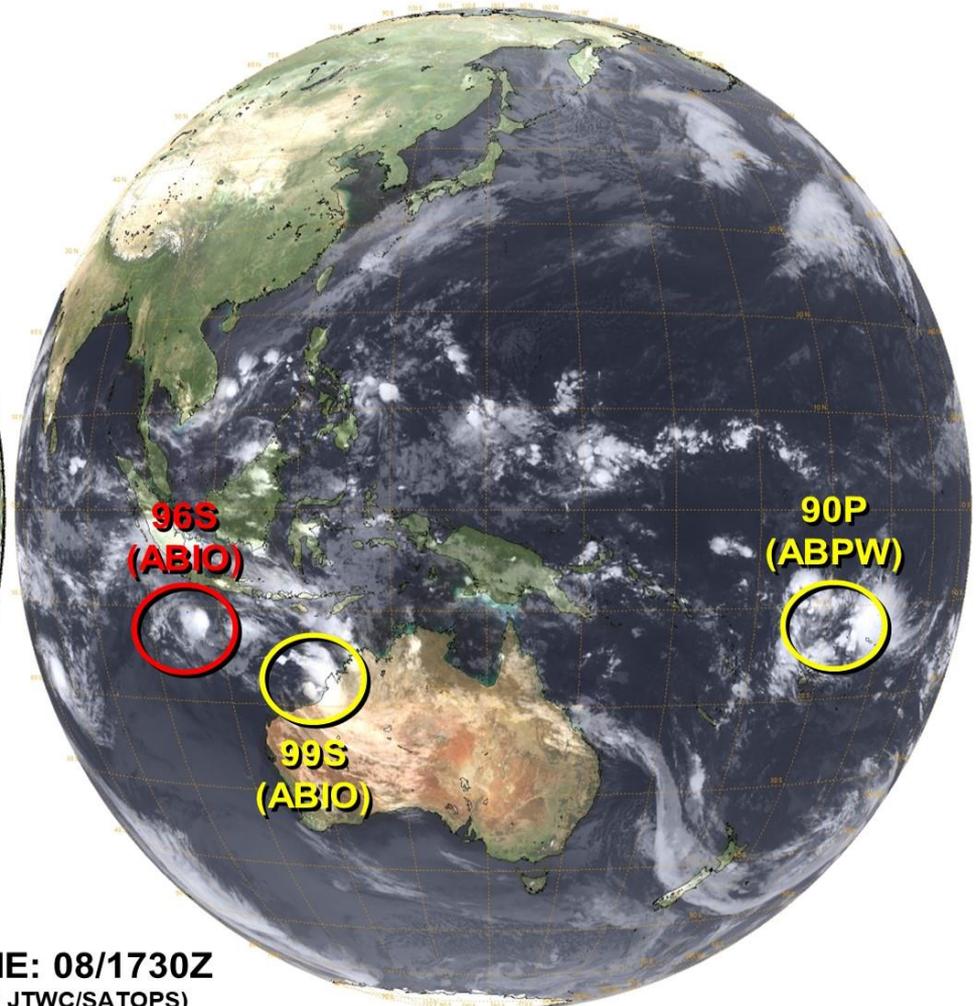
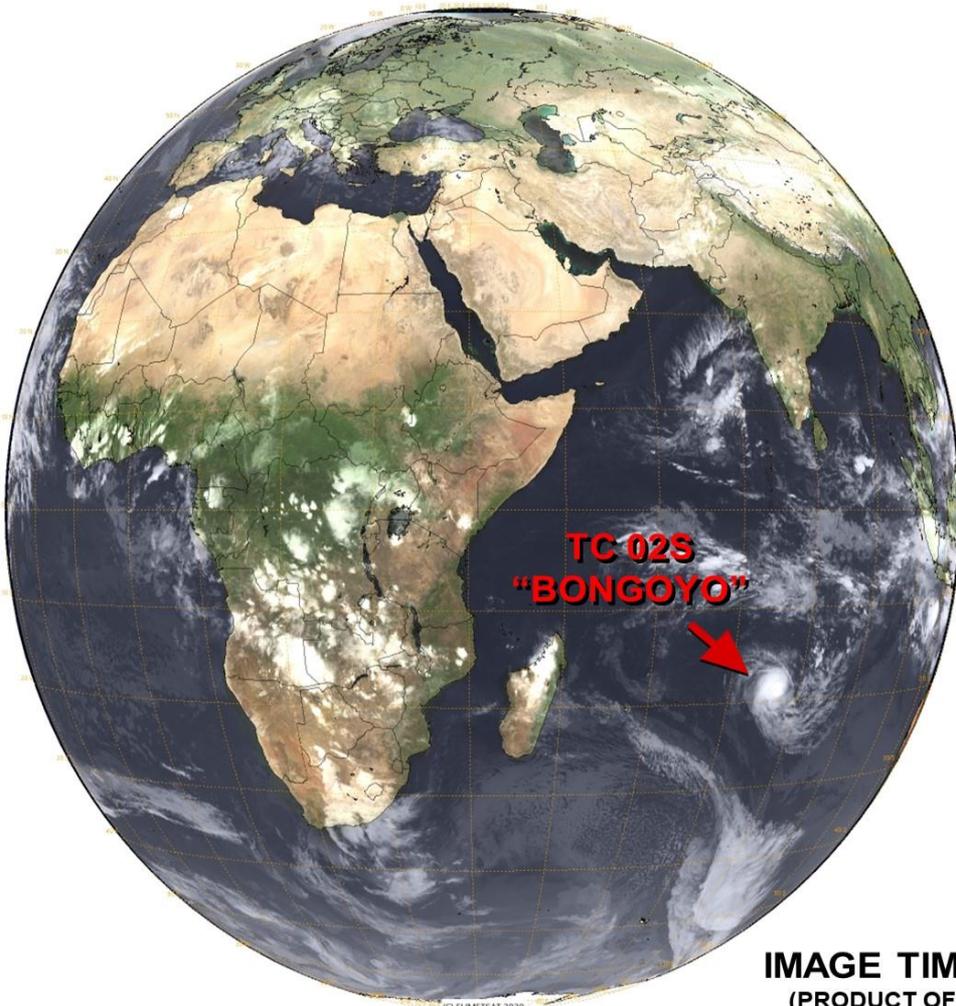


# Tropical Cyclone Development Potential



## ABIO

## ABPW



**IMAGE TIME: 08/1730Z  
(PRODUCT OF JTWC/SATOPS)**

(C) EUMETSAT 2020

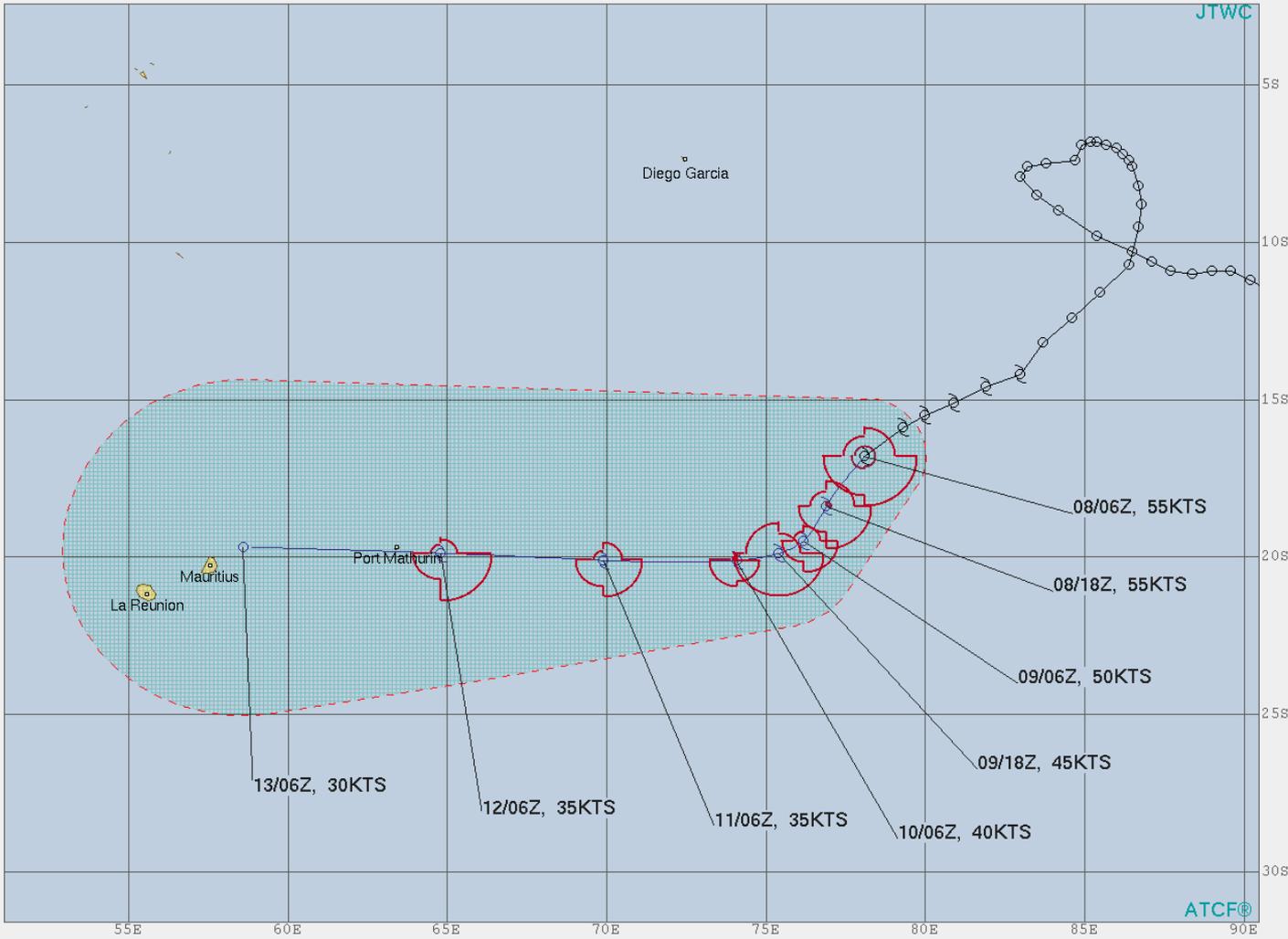
**LOW** TC development unlikely within 24 hours

**MEDIUM** TC development likely, but expected to occur beyond 24 hours

**HIGH** TC development likely within 24 hours (Reference TCFA)

**SUB TROPICAL** Monitoring for potential transition to TC. Invest label color denotes tropical transition probability

**Tropical Cyclone (Reference Warning)**



TROPICAL CYCLONE 02S (BONGOYO) WARNING #3  
 WTKS31 PGTW 080900  
 080600Z POSIT: NEAR 16.8S 78.1E  
 MOVING 230 DEGREES TRUE AT 15 KNOTS  
 MAXIMUM SIGNIFICANT WAVE HEIGHT: 16 FEET  
 08/06Z, WINDS 055 KTS, GUSTS TO 070 KTS  
 08/18Z, WINDS 055 KTS, GUSTS TO 070 KTS  
 09/06Z, WINDS 050 KTS, GUSTS TO 065 KTS  
 09/18Z, WINDS 045 KTS, GUSTS TO 055 KTS  
 10/06Z, WINDS 040 KTS, GUSTS TO 050 KTS  
 11/06Z, WINDS 035 KTS, GUSTS TO 045 KTS  
 12/06Z, WINDS 035 KTS, GUSTS TO 045 KTS  
 13/06Z, WINDS 030 KTS, GUSTS TO 040 KTS

CPA TO:	NM	DTG
PORT MATHURIN	9	12/12Z
PORT LOUIS	77	13/06Z
ST DENIS	189	13/06Z

- LESS THAN 34 KNOTS
- 34-63 KNOTS
- MORE THAN 63 KNOTS
- FORECAST CYCLONE TRACK
- PAST CYCLONE TRACK
- DENOTES 34 KNOT WIND DANGER AREA/USN SHIP AVOIDANCE AREA
- FORECAST 34/50/64 KNOT WIND RADII (WINDS VALID OVER OPEN OCEAN ONLY)



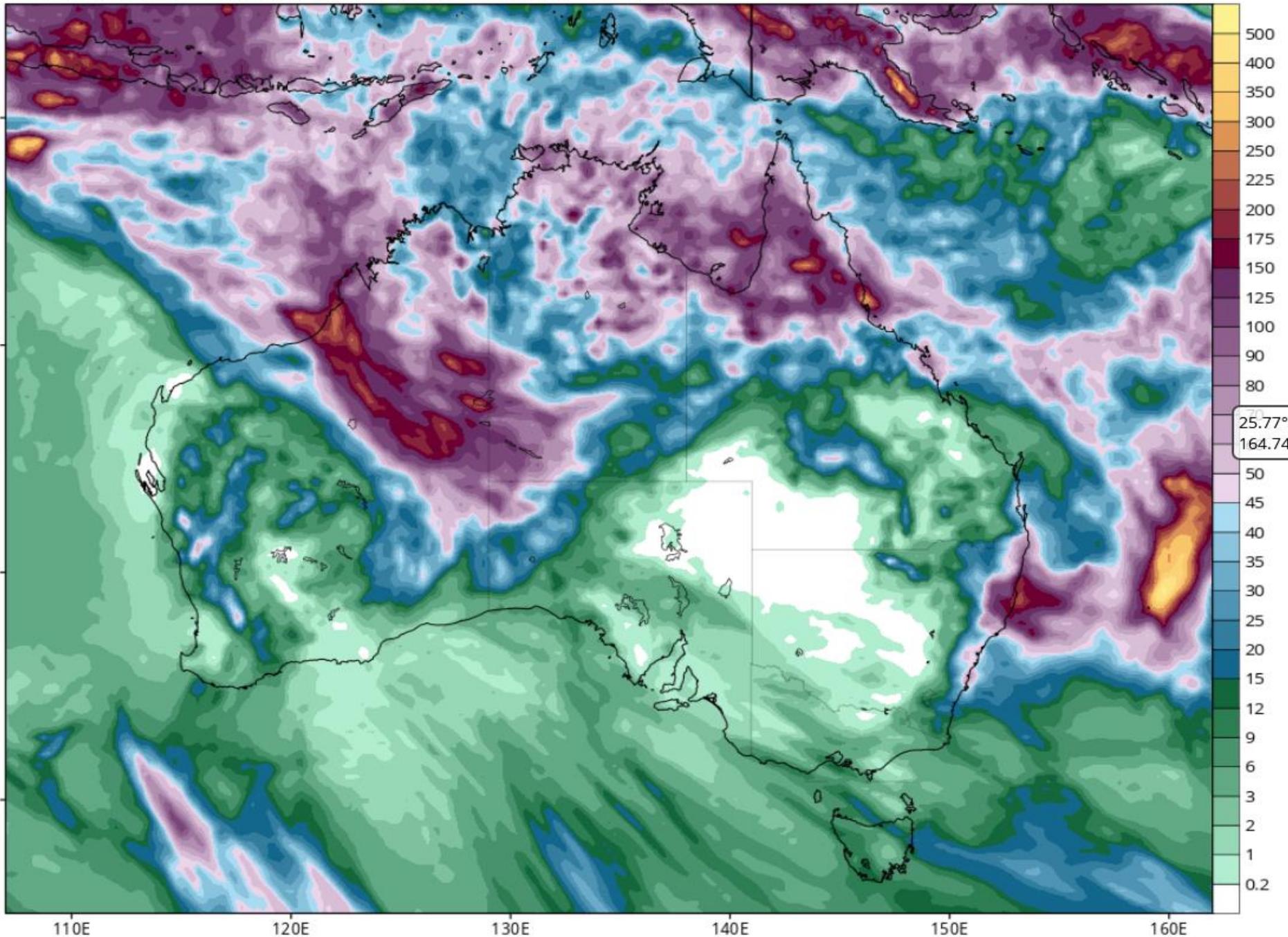
JTWC

ATCF®

# GFS Total Accumulated Precipitation (mm) from 12z08Dec2020 to 12z16Dec2020

Init: 12z Dec 08 2020 Forecast Hour: [192] valid at 12z Wed, Dec 16 2020

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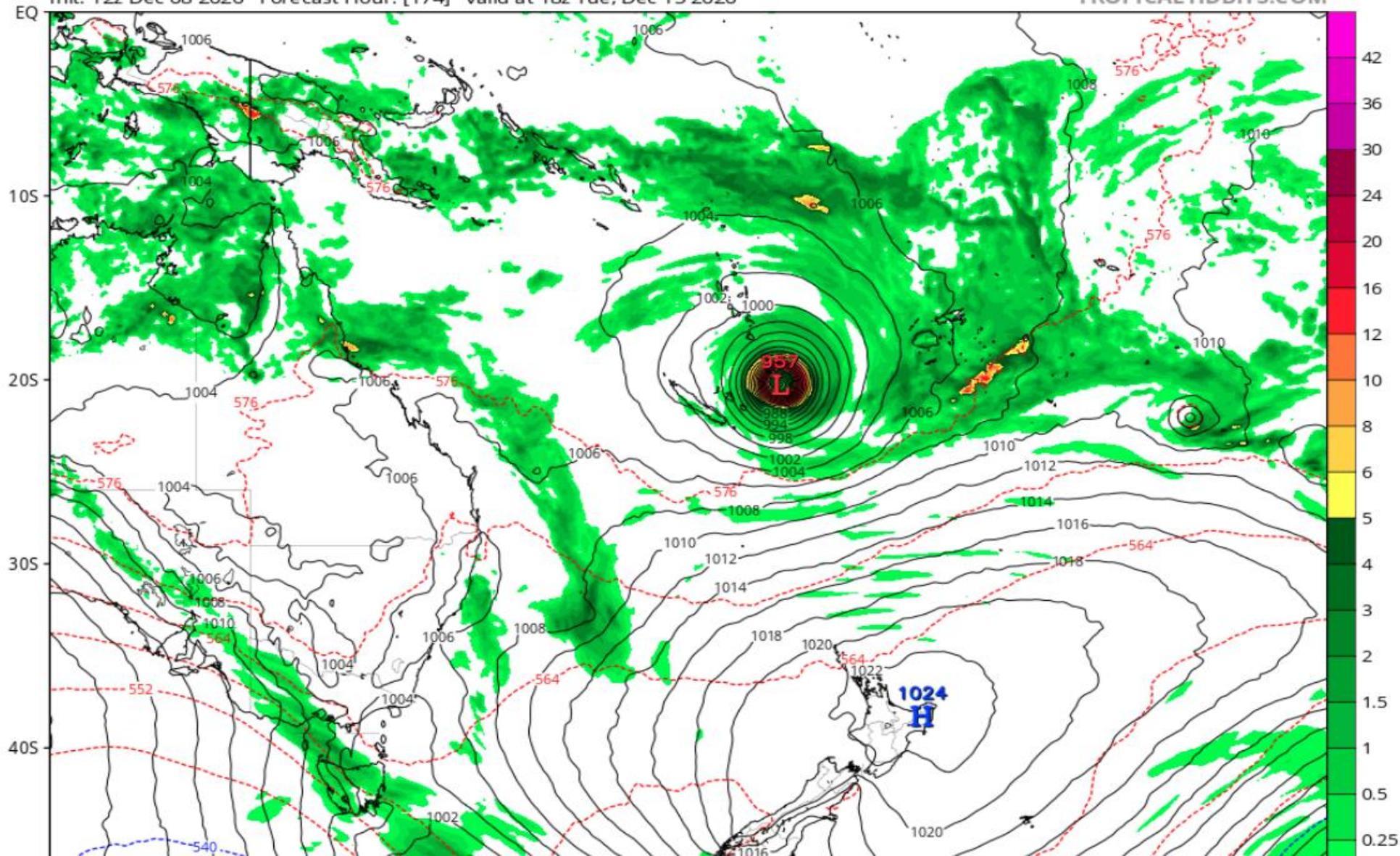




### GFS 6-hour Averaged Precip Rate (mm/hr), MSLP (hPa) & 1000-500mb Thickness (dam)

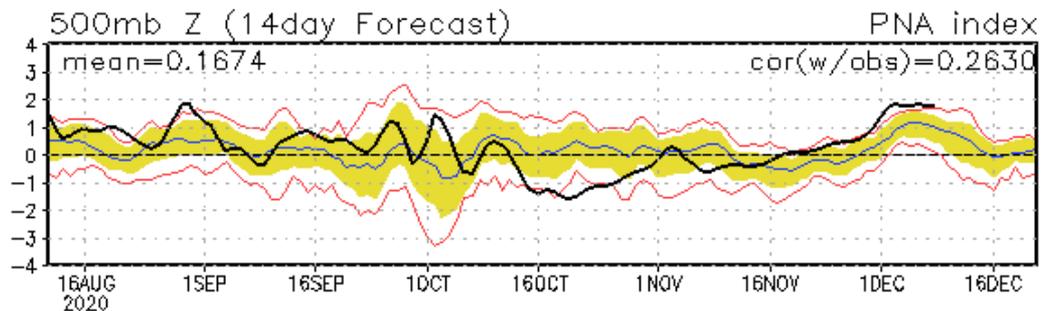
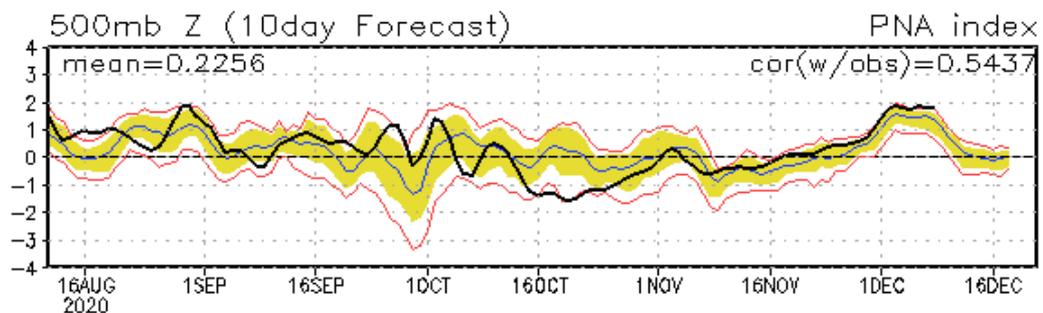
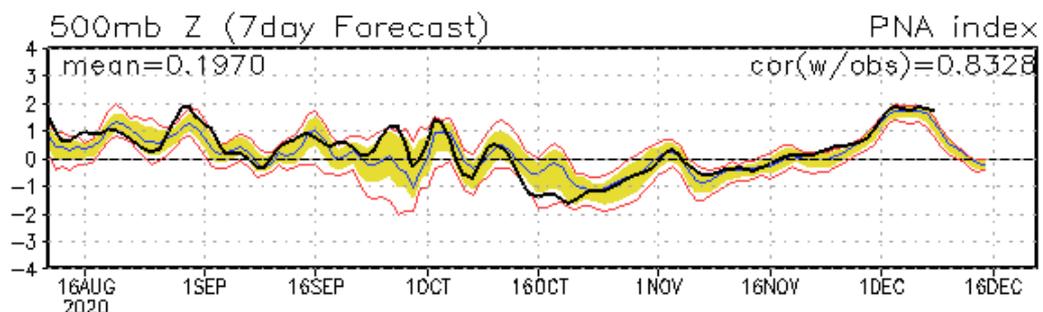
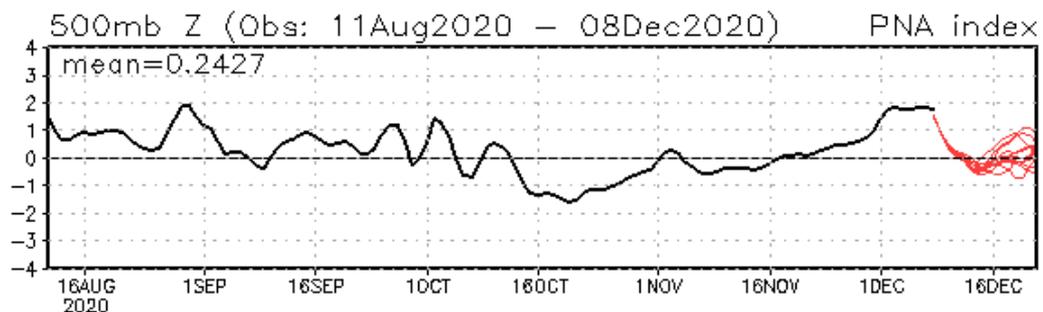
Init: 12z Dec 08 2020 Forecast Hour: [174] valid at 18z Tue, Dec 15 2020

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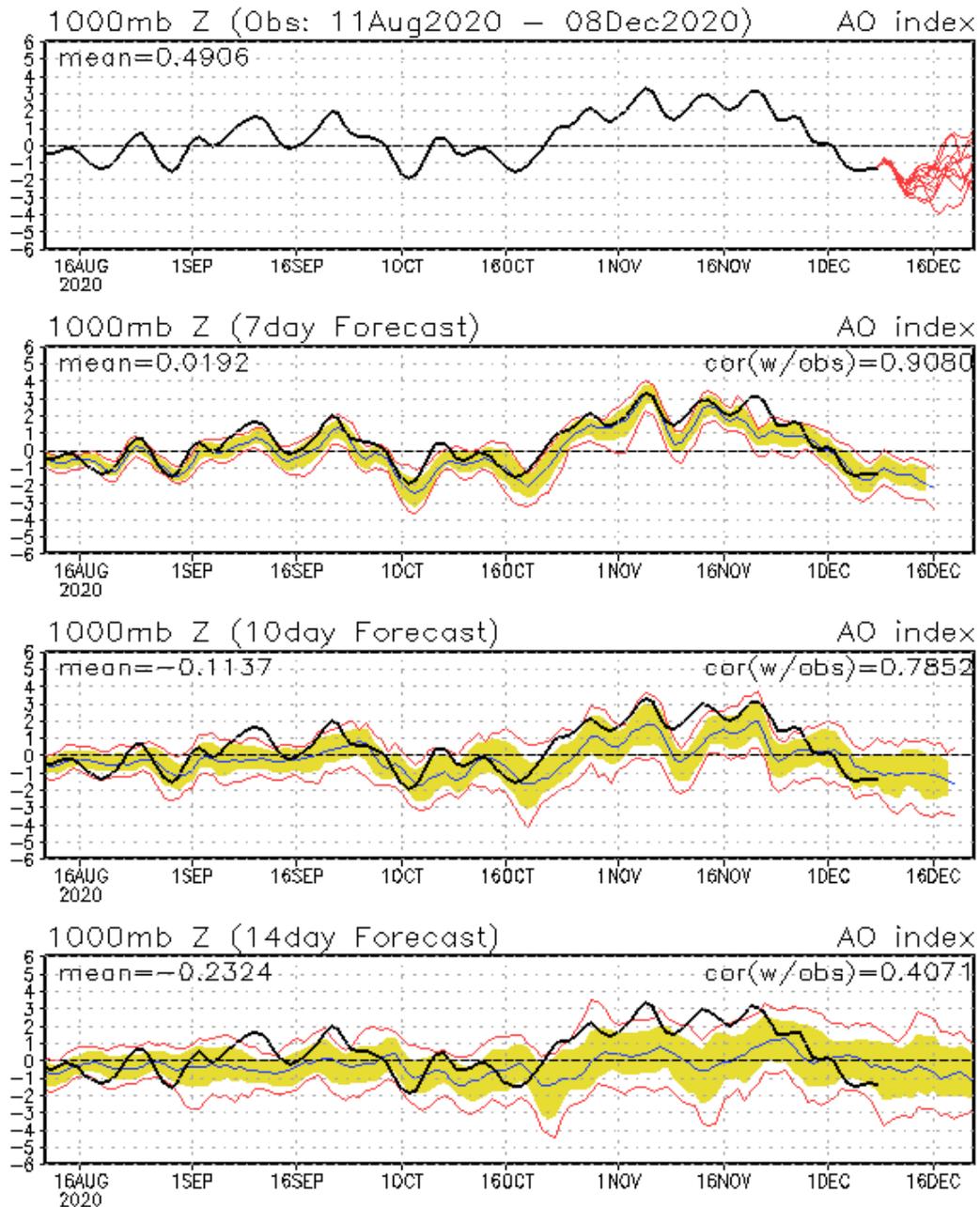


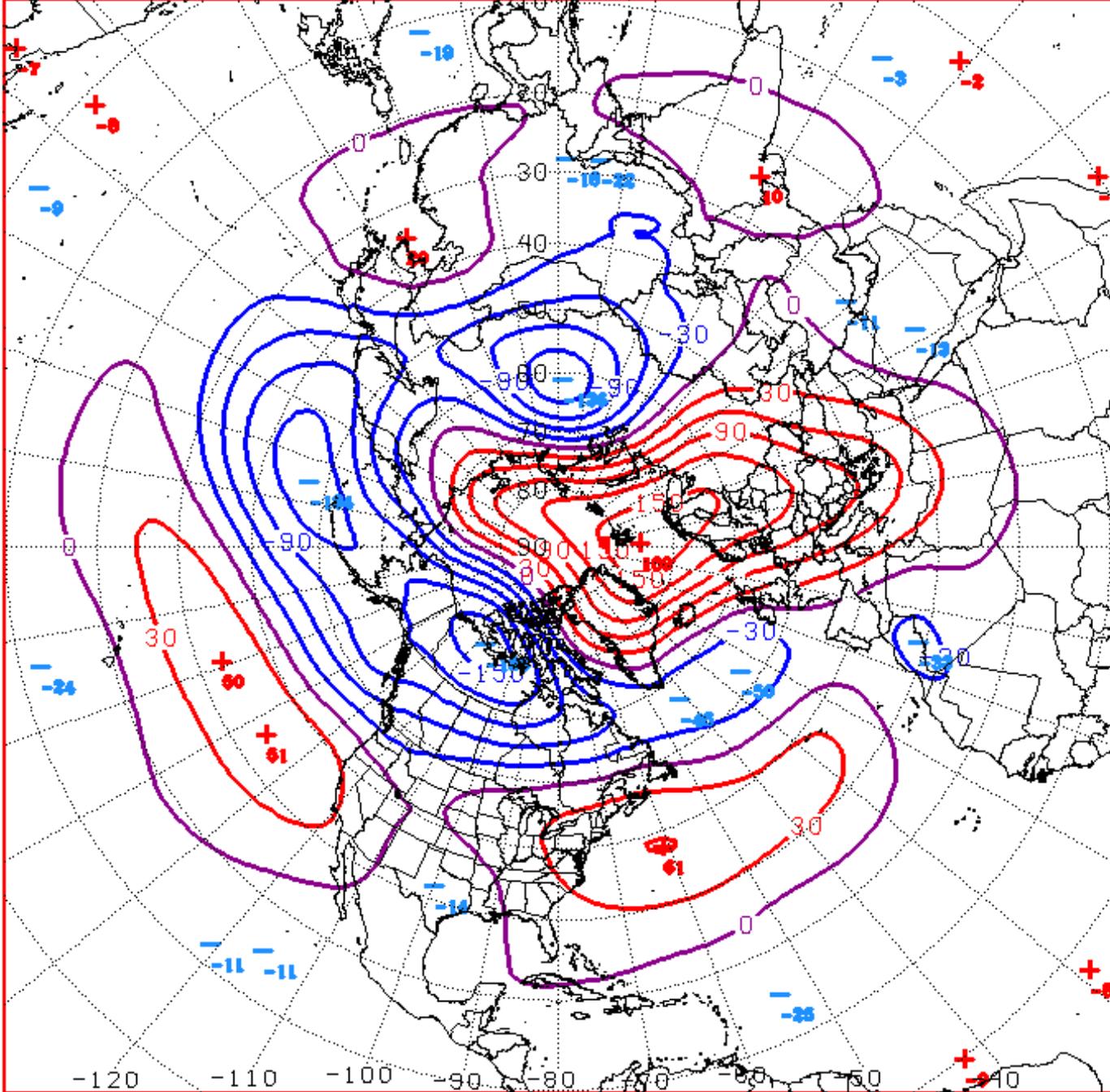
# Connections to U.S. Impacts

## PNA: Observed & ENSM forecasts



## AO: Observed & ENSM forecasts





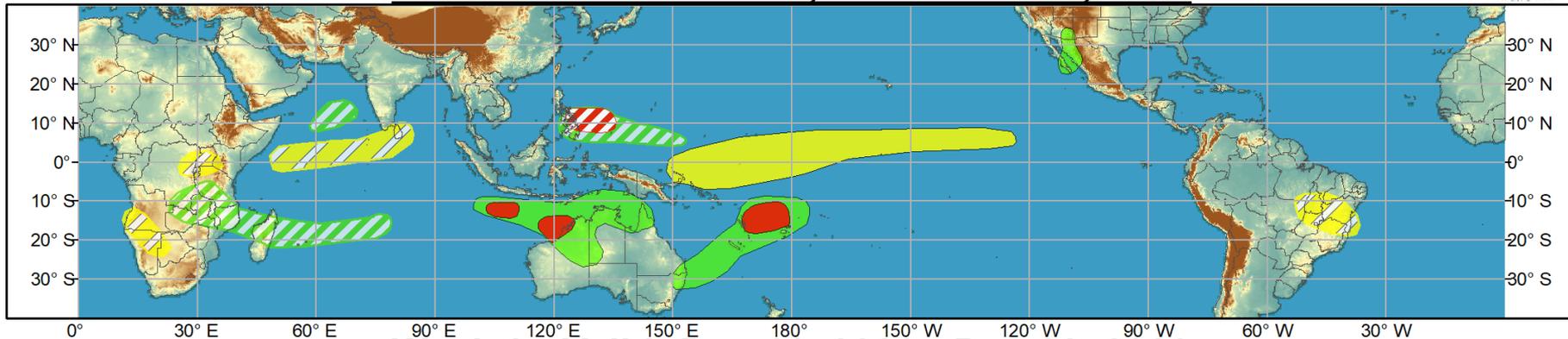
D+11 500 MB ANOMALIES FROM ALZ ENSM  
 CPC MAP MADE DEC 08 2020 1443 UTC CNTD DEC 19 2020



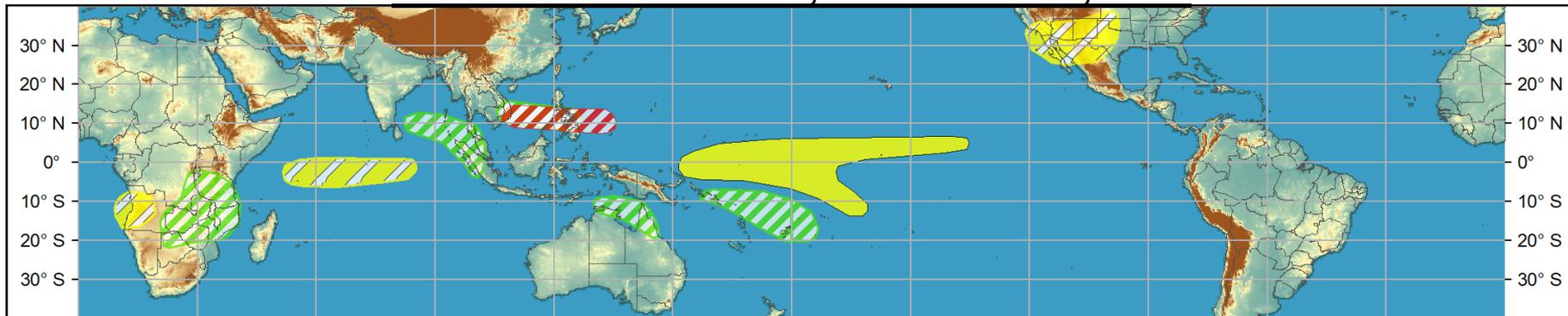
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